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Baldcypress

Forest Service

U. S. DEPARTMENT OF AGRICULTURE

BALDCYPRESS

(*Taxodium distichum*)

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Baldcypress is a long-lived tree which grows to large size throughout the swamplands of the southeastern part of the United States. The heartwood of cypress, noted for its durability, is especially suited for construction purposes where resistance to decay is required. The tree develops an expanded conical base often deeply lobed and an extensive root system which gives it a high degree of stability even in soft, wet soils. In locations where water covers the ground for long periods it produces peculiar conical growths known as knees which extend upward from the roots for several feet above the surface of the water. These growths appear to serve the double purpose of anchorage and of organs to supply an increased amount of oxygen to the roots.

The original supply of cypress (virgin stands) has been heavily depleted, and it is not reproducing in many cut-over swamps. Lack of seed trees and higher water levels than obtained at the time the original forests became established may be contributing causes. Cypress grows slowly under forest conditions, generally requiring at least two centuries to reach a size large enough to furnish a satisfactory proportion of heartwood lumber. In virgin stands trees not uncommonly attain an age of 800 years and reach a diameter of 6 feet above the basal swell and height of 120 feet. Occasional trees are 8 feet in diameter above the swell with a height of 150 feet and sometimes are 1,200 years old or more. The larger trees are generally hollow at the butt.

Cypress is expensive to cut and log. Logging is now done by the overhead skidder method in which the logs are dragged to a central point by means of a carriage traveling on a heavy cable suspended between trees generally 600 feet or more apart. In the larger operations, railroads must be constructed on piling to carry the logging machinery into the swamps and to get the logs to the mill. The prospects for a continued supply of cypress depend largely on the extent to which the swamplands where it grows naturally are reclaimed by drainage for purposes other than growing trees, and on the general adoption of improved methods of lumbering that will leave cut-over areas in a condition favorable to reproduction. Some second-growth cypress is now being cut on areas logged many years ago.

Nomenclature.—Baldcypress, commonly known as cypress, is also called southern cypress, red cypress, yellow cypress, and white cypress. The region of growth is sometimes part of the name, as tidewater red cypress, gulf cypress, red cypress (coast type), yellow cypress (inland type), etc.

Distribution and growth.—The range of cypress extends along the Atlantic coastal plain from Delaware to Florida and westward through the Gulf coast region nearly to the Mexican border in Texas and up the Mississippi Valley to southern Indiana (fig. 1). The heaviest stands occur in the extensive swamps of the lower Mississippi Valley and Florida, where pure forests of cypress formerly covered large areas. The coastal river swamps of North and South Carolina and Georgia [1] and the inland swamp districts along the Mississippi River, also formerly contained extensive cypress forests.

Although cypress is generally restricted to very wet situations and a warm climate, it will grow in soil where a moist condition is fairly permanent and under a considerable range of climate. It cannot, however, often compete successfully with other local species of trees except in locations so wet that other trees cannot exist. Cypress in the virgin forest generally grows slowly. Virgin trees in Louisiana 200 years old were found to have an average diameter of 20 inches breast high and an average diameter of 12.8 inches outside the bark at 20 feet above the ground.[2] Second-growth or open-grown trees grow con-

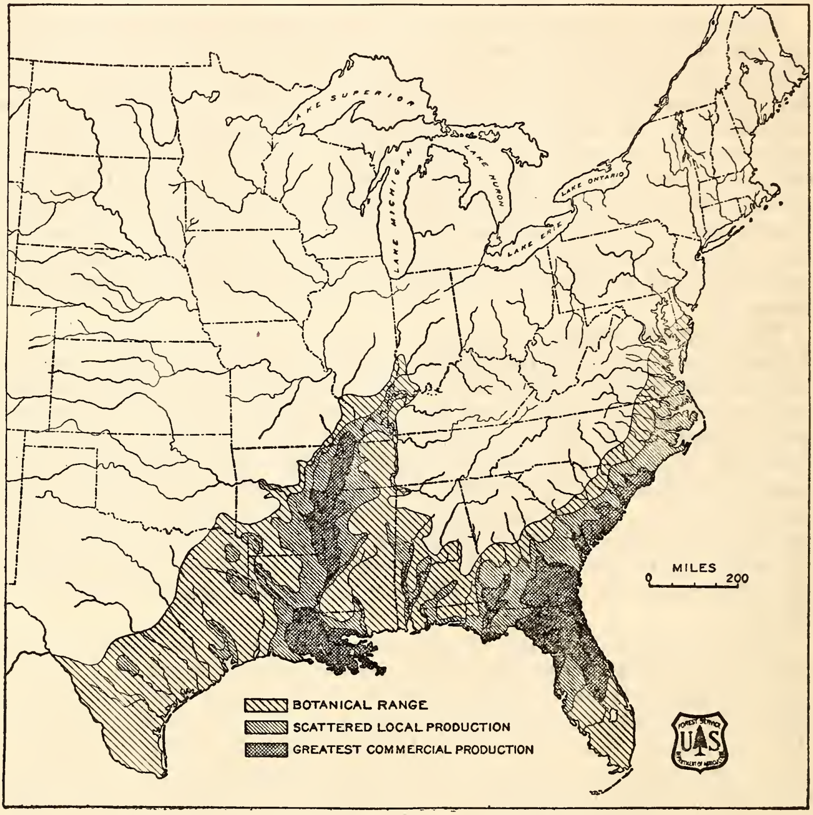

FIGURE 1.—Range of baldcypress (*Taxodium distichum*).

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[1] A species known as pondcypress (*Taxodium ascendens*), formerly considered a variety of baldcypress, occurs in portions of the same range as baldcypress especially in the Atlantic coastal plain. It is commonly cut and sold with baldcypress without distinction.

[2] The large swelling at the base makes it necessary to take measurements about 20 feet above the ground for comparison with other trees.

siderably faster. Second-growth cypress in Maryland 100 years old was found to reach an average diameter of 21.3 inches breast high and an average diameter at 20 feet above the ground of 8.7 inches. Saplings under favorable conditions reach a height of about 4 feet in 4 years.

Cypress can reproduce by sprouts from the stump as well as by seed. The seeds are produced in abundance but are not scattered to any extent by wind or other carriers. Considerable soil moisture is required for germination and early growth but submergence may cause death.

The heartwood of living cypress trees of all ages, especially that of overmature trees, is very susceptible to attack by a fungus which causes what is known as "pecky" cypress. This fungus frequently destroys a considerable part of the heartwood at the base of mature trees growing under very wet conditions. The action of the fungus ceases when the tree is felled, and as far as known the lasting qualities of cypress lumber are unaffected by the presence of pecky material.

Supply.—The total stand of cypress of saw-timber size was estimated in 1909 at 40,000,000,000 board feet[3] and in 1920[4] at 22,921,000,000 board feet. The latest estimate (1939) gives the total stand of cypress of saw-timber size as 11,554,000,000 board feet.[5] This estimate is based largely on a Forest Survey of the United States now under way and completed for a considerable portion of the area in which cypress grows. The stands of cypress of saw-timber size in the States or parts of States covered by the Survey are as follows:

	Board feet[1]
Alabama	284,600,000
Arkansas (¾ area of State)	713,200,000
Florida	3,873,300,000
Georgia	1,128,600,000
Louisiana	1,343,100,000
Mississippi	784,900,000
Oklahoma (southeastern corner of State)	4,000,000
South Carolina (southern quarter of State)	490,800,000
Texas (extreme eastern part of State)	198,000,000
	8,820,500,000

[1] International ¼-inch rule.

The stand of cypress in the area covered by the Survey makes up over 75 percent of the total estimated stand of the species. The remainder (2,733,500,000 board feet) is located largely in the coastal river swamps of North Carolina, Virginia, and northern South Carolina, and in southern and eastern Texas.

In Florida, where approximately one-third of the remaining cypress is located, about 52 percent of the stand is in the northeastern part, about 32 percent in the central and southern part, and about 16 percent in northwest Florida. Over 80 percent of the timber is old growth in the northern part of the State, while in the central and southern part less than 60 percent is old growth.

Production.—The production of cypress lumber rose from about 29,000,000 board feet in 1869[6] to a maximum of about 1,100,000,000 board feet in 1913 (fig. 2). Since then production has decreased considerably. In 1933, a year of business depression, it dropped to 158,000,000 board feet. By 1936 it had recovered to 441,000,000 board feet, but since then, in spite of war demands for lumber of all kinds, production has decreased. In 1942 it was 319,000,000 board feet, and in 1943 253,856,000 board feet. The 1942 cut came from 18 States. Florida furnished about 23 percent, South Carolina 19 percent, and Louisiana 17 percent. The average annual production of cypress lumber for the 10-year period 1933–1942 was 344,000,000 board feet. Louisiana was the leading State in cypress lumber production up to 1929 and Florida second.[7] In 1929 Florida took first place and has held it since that time[8] with Louisiana dropping to second place, except in 1941 and 1942, when it was third and South Carolina was second. Other States prominent in cypress lumber production have been Mississippi, Arkansas, and Georgia.

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[3] Bureau of Corporations, U. S. Department of Commerce and Labor. THE LUMBER INDUSTRY. PT. 1—STANDING TIMBER. Table 10, p. 76. 1913.

[4] United States Forest Service. TIMBER DEPLETION, LUMBER PRICES, LUMBER EXPORTS, AND CONCENTRATION OF TIMBER OWNERSHIP. Rpt. on Senate Res. 311, 66th Cong., 71 pp. 1920.

[5] United States Forest Service. FOREST LANDS OF THE UNITED STATES. Rept. for Joint Cong. Committee on Forestry, 77th Cong., 1st sess., Senate Doc. 32, 44 pp. 1941.

[6] Earliest year for which statistics on cypress are available.

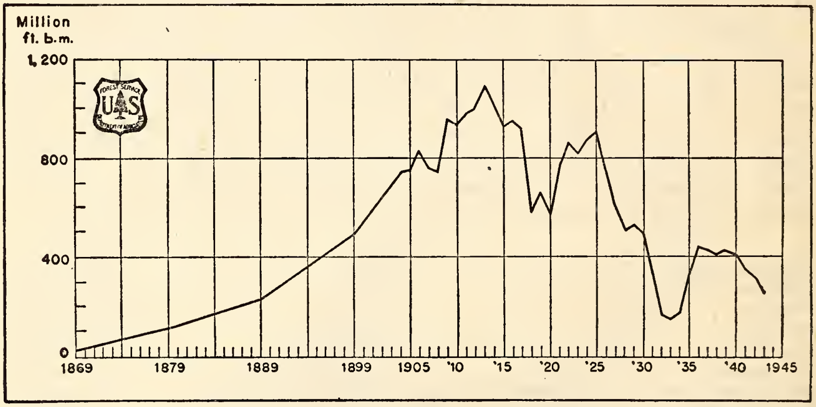

Figure 2.—Lumber production of baldcypress (*Taxodium distichum*), 1869–1943.

In addition to the cypress cut for lumber, indeterminate amounts are used for railway ties, poles, fence posts, piling, cooperage, shingles, and other purposes. The average annual consumption of cypress for all purposes in recent years is estimated at 400,000,000 board feet.

Properties.—The narrow sapwood[9] of cypress is nearly white. The heartwood varies widely in color, ranging from light yellowish brown to dark brown, reddish brown, or chocolate. In the Gulf Coast and South Atlantic regions the color averages darker than farther north. Wide color variations, however, may occur in any one locality. Much of the cypress lumber from the lower Mississippi Delta and other southern regions has a reddish tinge due to the reddish color of the summerwood bands in the annual rings, and is commonly known as red cypress. Wood from the Florida swamps is sometimes dark in color with lighter streaks which give a rich effect when used for interior paneling or it may be comparatively light in color with a yellowish or reddish tinge. Lumber from farther north is sometimes called white cypress because of its lighter color.

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[7] Except in 1905 when Arkansas was second and Florida third.

[8] Except in 1933 when Louisiana was first and Florida second.

[9] In trees 2 feet in diameter grown under forest conditions the sapwood is about 2 inches thick. In more open-grown trees the sapwood is wider.

The wood of cypress is moderately heavy,[10] moderately strong, moderately hard, and moderately limber. Durability[11] under conditions favorable to decay is one of its outstanding properties. The lumber contains a considerable amount of moisture when first cut from the log[12] and requires more care and more time to kiln-dry satisfactorily than many of the conifers. It is somewhat subject to raised grain under certain conditions of exposure. The wood has a moderately small shrinkage—somewhat greater than the cedars and redwood but less than southern pine. Slow air-drying is successfully practiced. The wood is not subject to discoloration by bluing. The group of woods ranking highest in paint-holding ability includes cypress, redwood, and the cedars. Cypress does not impart taste, odor, or color to food products that come in contact with the wood.

Principal uses.—Cypress is used principally for building construction, especially for exposed parts or where a high degree of resistance to decay is required.[13] It is frequently used for beams, posts, and other members in docks, warehouses, factories, bridges, and various classes of heavy construction. Cypress is well suited for siding and for porch construction on account of its paint-holding ability and its resistance to weathering and to decay. It is also largely used for caskets and burial boxes and for sash, doors, blinds, and general millwork, including interior trim and paneling for which an increasing demand is reported. Boxes and crates consume considerable cypress—mostly of low grade.

Other uses for cypress include tanks, vats, and tubs such as are used in creameries, breweries, bakeries, dyeworks, distilleries, and soap factories; ship and boat building; refrigerators; car construction; and patterns and flasks. In the construction of greenhouses, where a durable wood is necessary, cypress is frequently used. The wood is also used for roof planks in dye houses and cotton mills, for cooling-tower construction, and for stadium seats where a high degree of resistance to decay is needed. Pecky cypress, which is relatively cheap, is used where good appearance and water tightness are not required but durability is needed. Cypress, in forms other than lumber, is used in considerable quantities for railway ties and in limited quantities for poles, piling, shingles, cooperage, and fence posts.

Table 1 shows the amounts of cypress used in 1912, 1928, 1933, and 1940 in the manufacture of various classes of wooden products. Practically all this material was in the form of lumber. A small proportion consisted of logs and bolts and a very small proportion was veneer.

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[10] The average weight of cypress in a thoroughly air-dry condition (12 percent moisture) is 32 pounds per cubic foot.

[11] Refers to heartwood. The sapwood of all species lacks durability.

[12] The average amount of moisture in the lumber cut from 10 typical cypress trees from Louisiana and Missouri shortly after it was sawed from the logs was 91 percent.

[13] In this statement and in others which discuss the use of cypress for purposes where durability is an important factor, it should be understood that cypress heartwood is referred to and not the much less durable sapwood.

TABLE 1.—*Baldcypress used in the manufacture of wooden products*

[Thousands of board feet]

Classes of products	1912	1928	1933	1940
Agricultural implements	2, 682	370	139	115
Boxes, baskets, and crating	38, 963	25, 848	[1] 19, 101	[1] 40, 245
Boxes, cigar and tobacco	1, 559	----------	----------	----------
Car construction and repair	1, 676	2, 659	1, 874	1, 466
Caskets and burial boxes	19, 158	36, 961	29, 983	36, 100
Conduits, pumps and wood pipe	2, 055	305	15	136
Dairy, poultry and apiary supplies	(2)	1, 961	112	116
Electrical equipment	201	964	470	18
Fixtures	3, 365	1, 223	494	511
Flooring	(3)	(3)	----------	218
Furniture	3, 478	1, 500	336	100
Handles	152	84	----------	----------
Instruments, musical	70	28	----------	4
Instruments, professional and scientific	23	12	5	3
Ladders	(2)	(2)	----------	----------
Laundry appliances	15. 321	3, 432	68	5
Machinery	15, 881	113	1	2
Patterns and flasks	74	----------	604	1, 036
Pencils and penholders	(4)	----------	----------	----------
Playground equipment	----------	----------	1	15
Plumbers' woodwork	25	----------	----------	----------
Printing material	30	----------	----------	----------
Radio, phonograph cabinets	(5)	(5)	----------	----------
Refrigerators	[6] 1, 700	[6] 2, 178	278	1, 544
Rollers, shade and map	20	----------	----------	----------
Sash, doors, general millwork	[7] 509, 861	[7] 187, 923	[8] 9, 515	[8] 28, 079
Ship and boat building	5, 015	1, 486	1, 496	3, 362
Shuttles, spools, bobbins, looms	----------	----------	----------	253
Signs, scenery, displays	30	943	236	34
Sporting and athletic goods	166	----------	7	2
Tanks	35, 409	8, 321	4, 150	7, 662
Toys	150	----------	2	----------
Trunks and valises	1, 275	228	249	8
Vehicles, motor	(9)	2, 128	12	415
Vehicles, nonmotor	1, 321	81	10	----------
Venetian blinds	(3)	(3)	(3)	56
Woodenware and novelties	8, 693	528	135	96
Total	668, 353	279, 276	69, 293	121, 511

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[1] Figures for 1933 and 1940 include baldcypress used for boxes and crates by plants not classified as manufacturers of wooden products and which were not included in the canvasses of 1912 and 1928. The amounts included for nonmanufacturers of wooden products were as follows: For 1933—4,672,000 board feet and for 1940—20,252,000 board feet.

[2] Included in "Woodenware and novelties."

[3] Included in "Sash, doors, general millwork."

[4] Included in "Instruments, professional and scientific."

[5] Included in "Furniture."

[6] Includes kitchen cabinets.

[7] Includes planing-mill products such as siding, ceiling, and flooring.

[8] Planing-mill products not included in 1933 and 1940 canvasses except "Flooring," which is listed separately.

[9] Included in "Vehicles, nonmotor."

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